**20.11- Electrostatics, Conservation, and Charge Interactions**

There two kinds of electric charge, positive and negative. Charges that are the same repel each other and charges that are opposite attract each other. Electric charge cannot be created or destroyed. Objects can be charged by the transfer of electrons.

**20.2- Methods of Charging**

There are three ways to polarize a charge: friction, conduction and induction.

To polarize by friction- rub electron from one material to another.

To polarize by conduction- touch an un-polarized object to a polarized object

To polarize by induction- bring a polarized object near an unpolarized object to separate the charges.

**20.4- Calculating Electric Force Between Charged Objects**

Nm2/C2

Qa and Qb are the two charges and r is the distance between them.

**20.9-Electric Potential Difference in an Electric Field Between Two Charged Areas**

V is voltage, E is electric field and d is the distance.

**Example Problems**

1. What is the force between a C charge and a C charge, separated by .93m.

Given: C

C

Find:

Equation:

Answer:

1. A lightning bolt from a cloud hits a tree traveling 546m to the ground through an electric field of . What is the potential difference between the cloud and the tree just before the lightning bolt strikes?

Given: d=

E=

Find:

Equation:

FURTHER RESOURCES WHOO

[www.sciencemadesimple.com/static](http://www.sciencemadesimple.com/static)

[www.physics.sju.edu/becker/physics51/elec\_charge.htm](http://www.physics.sju.edu/becker/physics51/elec_charge.htm)

[www.mazzworld.net/V6exam.html](http://www.mazzworld.net/V6exam.html)